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SCIENTIFIC INFORMATION REPORT

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CHINESE SCIENCE

(32)

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# SCIENTIFIC INFORMATION REPORT

# Chinese Science (32)

This is a serialized report consisting of unevaluated information prepared as abstracts, summaries, and translations from recent publications of the Sino-Soviet Bloc countries. Individual items are unclassified unless otherwise indicated.

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#### BIOLOGICAL SCIENCES

ENCEPHALOMYELITIS PRODUCED BY INJECTION OF MOUSE BRAIN TISSUE -- Peiping, Wei-sheng-wu Hsueh-pao (Acta Microbiologica Sinica), Vol 9, No 1, Feb 63, pp 1-8

[The following is an English-language abstract appearing at the end of a Chinese article, entitled "Experimental Allergic Encephalomyelitis Induced by Mouse Brain Tissue," by Wang Yung-chi (3769/3938/2813), Lu Chin-han (1687/6930/3352), Li Mei-jung (2621/5059/1369), and Chang Yung-fu (1728/3057/4395) of the National Vaccine and Serum Institute, Peiping, which in the Chinese article is given as the Institute of Biologicals of the Ministry of Public Health. Additional data contained in source are also given below.]

Experimental allergic encephalomyelitis was regularly produced by injection of normal mouse brain tissue emulsified with an adjuvant containing heat-killed BCG and liquid parafin into guinea pigs, monkeys, and albino rats; however, it was much less frequently induced in rabbits and white mice.

In guines pigs, the typical findings of the disease was a paralysis of the hind legs and death from ascending paralysis. In a few animals, however, following paralysis of one of the limbs, a gradual recovery was observed. Similar reactions occurred in the other types of animals used. It was noted that the clinical findings of the disease in monkeys were much more complex than those found in guinea pigs.

The authors used 23 references, all of which were in English except 2 German and 2 Russian, dated 1933-1959 with one exception, 1887. This article was received for publication on 27 September 1962. The authors expressed their thanks to the laboratory pathology team and the Department of the Chinese Academy of Medical Sciences for their assistance in the pathological investigations.

#### TECHNICAL SCIENCES

STUDY ON GRADUATING MACHINES -- Peiping, Ts'e-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 1, Feb 63, pp 44-49

[The following is a translation of the Russian-language abstract which appears at the end of an article, entitled "Some Problems on Graduating Machines for Graduating Precise Graduated Circles," by Tsou Tzu-ch'iang (6760/5261/1730.]

This article sets forth certain problems concerning the precision of graduating machines, [problems] encountered in the investigation of the technology of graduating high-precision graduated circles.

After a detailed study of the problems relating to oscillations of the main axle, the author considers it possible to subdivide such oscillations into three parts: single-period oscillation, two-period oscillation, and random oscillation. The article examines the characteristics of these three oscillations, methods for their use, their effect on the performance accuracy of the graduating machine, and methods of reducing these effects. In analyzing the error distribution for the oscillation of the axle in the graduating machine, the author proposes methods for the correct sinking of the cutting tool to reduce the effect of the two-period oscillation. He introduces certain results in the investigation of the precision V of the (formed) system of the axle, connected with the performance precision of the graduating machine.

In considering the problem on abrasion and elastic deformation in the graduating machine, the author notes the effect of the primary displacement of elasticity in the worm gear at the very beginning of the work of the graduating machine (i.e., the phenomenon of "initial attack" of elasticity) and the phenomenon of return attack of elasticity of the worm gear at the beginning of the operation of the graduating machine. The article examines the effect of the duration of rest of the graduating machine begins rotating, and the effect of temperature change on the abrasion. The article also discusses certain exploratory results which the author obtained in applying the methods of analyzing the frequency spectrum for studying the problems on the abrasion of pins in the graduating machine.

The article also examines the problem concerning vibration of the graduating machine. In considering the vibration created within the graduating machine itself, the author also analyzes certain sources of this vibration, its characteristic features, and methods for eliminating it.

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The article closes by examining the effect of temperature change on the precision of graduating the graduated circles and proposes certain measures relative to this.

PEIPING MUNICIPAL SILICATES SOCIETY HOLDS FIRST ANNUAL CONFERENCE -- Kuei-suan-yen Hsueh-pao, Vol 1, No 2, 15 May 62, p 117

The Peiping Municipal Silicates Society held its first annual conference on 9-15 May 1962. The conference summarized about 1-2 years of production experience and research results. The conference received a total of 95 papers on cement and cement products, glass and glass fiber, ceramics, and bricks. Comprehensive theoretical papers on subjects such as the application of petrology to silicates research and a discussion of the potassium fluosilicate method for rapid determination of silica were also read. In addition, more than 30 papers on special subjects were read to interested groups. These included such subjects as research on sulfate cement and expanded cement, design norms for a largescale cement plant, revision of cement standards, new cement products, etc. In the field of glass and glass fibers, there were papers on the chemical stability of glass fibers, techniques of glass determination, new electrical fusion techniques, etc. In the field of ceramics, there were articles on conservation of coal in inverted flame kilns, largescale sanitary ceramics production techniques, infrared radiation apparatus, etc. Finally, there were technical summaries of theories in several special fields and a discussion of work and plans for future academic activities. The conference elected 39 directors of the Peiping Municipal Silicates Society, including such men as Liu Yuan-shih (0491/ 0337/1102) Wang T'ao (3769/3447), Ling Ch'i-chun (0407/0366/4546), and Wang Chine (3769/0256).

#### EARTH SCIENCES

STUDY ON AZIMUTHAL PROJECTIONS -- Peiping, Ts'e-hui Hsueh-pao (Actr Geodetica et Cartographica Sinica), Vol 6, No 2, May 63, pp 104-119

[The following is a translation of the Russian-language abstract which appears at the end of an article entitled "Pseudoazimuthal Projections and Their Application for the Entire Map of China," by Liu Chia-hao (0491/1367/6275) and Li Kuo-tsao (2621/0948/5679).]

On the basis of the principle that a projection should be selected according to the form of the cartographic territory and on the basis of investigating the type of territory in China, the authors proposed an isoconic equation with the form  $\rho = \alpha + \frac{\alpha}{2}$  cos  $3 \, \varphi$ . A projection which has such an equation may be considered best for the territory of China. The authors then investigated pseudoazimuthal projections. They considered the determination of the radius of the pseudoazimuthal projections. They analyzed the values of the parameters in the cited projections, and they proposed strict methods for determining the parameters. After this, the authors developed a plan for the entire map of China. The projection of this plan is an approximate equidistant projection. Its isoconic projection of the scale of the areas and of the greatest angular distortions are almost identical to and uniform with the type of territory in China. In this respect, the different distortions of the projections adopted for China could be reduced. A brief comparison of the developed projection with the azimuthal equidistant projection and with the conic equidistant projection in this article confirmed improvement in the distorted areas and angles in the developed projection. In considering the limited applicability of pseudoazimuthal projections, the authors investigated combinative pseudoazimuthal projections. They proposed four principles of combination and thus established a theoretical foundation for the application of combinative pseudoazimuthal projections. A plan for combinative pseudoazimuthal projections for the entire map of China was developed according to the special territorial features in China. This is a plan for approximate pseudoazimuthal equidistant projections, whose distortions have not only those advantages as the aforementioned plan, but also certain improvements in many places. Finally, the article demonstrates that pseudoazimuthal projections have considerable flexibility; and after having been developed in this article, they will surely receive even wider application.

WORK ON THE THEORY OF EQUIVALENT OBSERVATIONS -- Peiping, T'se-hui Haueh-pao [Acta Geodetica et Cartographica Sinica], Vol 6, No 2, May 63, pp 59-90

[The following is an English abstract of an article, entitled "Equivalent Observation in a Broad Sense," by Kuan Hsueh-hai (7070/1331/3189).]

The theory of equivalent observations in a broad sense is an extension of the theory of equivalent observations to correlated observations.

In the first part (chapter I) of this paper, definitions of three types of equivalent observations are given, and four theorems concerning these observations are proved.

In other parts of this paper, the applications of this theory to several typical problems are discussed and a series of applied formulas are derived.

Meanwhile, some methods of adjustments suggested by other authors are discussed.

CHINESE GREAT SCALE TRIANGULATION CALCULATED WITH MATRIX -- Peiping, T'se-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 1, Feb 63, pp 1-13

[The following is an English abstract which appears at the end of an article, entitled "The Matrix Adjustment by Groups of Great Scale Triangulations," by Chuang K'un-yuan (5445/2492/0337)].

This paper treats of the adjustment by groups of great scale triangulations calculated with matrix. The author aims at simplifying the adjusted calculus. At first, by arranging the normal equations suitably, an adjusted method by groups has been established. According to the normal figures, this method divides the triangulations into sections and regularizes the construction of diagonal submatrix in the normal equations. By the general iteration, the author also obtains the iteration by groups  $K=b_0+b_1+b_2+b_3+...+b_5+and$  further gets it in the form of Seidel. The formula  $\dot{p}_F = [f \ f] + [q\phi]$  may calculate the weight on functions of adjusted values. Secondly, when iterated matrix B has one minimum eigenvalue  $\lambda_1$  but  $|\lambda_1| < 1$ , or two maximum eigenvalues  $\lambda_1 = \lambda_2$  but  $|\lambda_1| < 1$ , the author finds the convergence formula to expedite the convergence of the iteration. Thirdly, the author suggests using the method of P. A. Hansen or enlarged matrix to calculate the inversion A  $\frac{11}{11}$  and gives several tables to invert the diagonal submatrix. At last, there is an example with 21 normal equations. Such an example has been calculated by the author himself and completed within 16 hours

only. If calculated by three persons, it will be completed within 8 hours surely. This method completes it so rapidly, and the accuracy may be carried out to any degree. Therefore, this method is more fit for the adjustment of great scale triangulations calculated with hand calculator or high speed calculator.

(Included in this article are seven pages of tables and charts which are co-ordinated with this article; there are also many diagrams and equations contained throughout the article.)

STUDY ON ISOLINE GRAPHS -- Peiping, Ts'e-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 1, Feb 63, pp 31-38

[The following is a translation of the Russian-language abstract which appears at the end of an article entitled "Analysis of Computation and Equalization of Triangles in the Orientation of Mine Shafts With the Aid of Isoline Graphs for Error," by Chiang Yu-hen (3068/7183/4024)

In applying isoline graphs for error, the author of this article makes a detailed study of formulas for computing connecting triangles, their accuracy, the problem of their equalization, etc. These graphs clearly express the law of error distribution and the relationship between error and the triangle form.

The following conclusions were obtained as a result cof the analysis:

- 1. The elongated form of connecting triangle is the most effective. It must be applied in every possible way in practice and computed according to the formula of sines.
- 2. When there is no opportunity to construct an elongated form, it is possible to apply an approximately isosceles or equilateral form, which is less precise and must be computed according to the formula of the sides. Other forms are considered ineffective.
- 3. The equalization of connecting triangles does not have any practical value. However, the equalization of measured angles at the station may be of some benefit.

STUDY ON MATHEMATICAL CARTOGRAPHY--Peiping, Ts'e-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 1, Feb 63, pp 39-43

The following is a translation of the Russian-Language abstract which appears at the end of an article, entitled "State and Trend in the Development of Mathematical Cartography," by Wu Chung-hsing (0702/1813/1840).

The article briefly sets forth the state of the development of mathematical cartography over more than 20 years and the further trend in its development.

In this article, the author examines the general direction with the following questions: on the induction of available cartographic projections and their development; on the search for new projections based on the disposition of deformations of known projections and on their selection with respect to cartographic requirements; on changes in cartographic projections; on the development of map measurements; on the composition and use of nomograms; on improvements in developing projections, and on investigation of the history of mathematical cartography. These observations may be aids to cartographers in our country.

STUDY OF CARTOGRAPHY IN CHINA--Peiping, Tsb-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 2, May 63, pp 120-135

The following is a translation of the Russian-language abstract which appears at the end of an article, entitled "On the Progress of Mathematical Elements and the Description of the Contents in Chinese Maps," by Kao Chun (7559/0303)

China is the focus of cartography in the Orient. Many outstanding cartographic productions had already appeared in China in ancient times. For example, in the 3rd Century, P'ei Hsui (224-271) had already created a map, "China and Its Tributary Nations," and had postulated six basic principles of cartography. In later times, Chia Tan (730-805) designed a map, "China and Other Countries," which covered Asia.

"Ruled Squares in Li" /a li is a measure of length in China; one li equals one-half kilometer/was a traditional cartographic method in ancient China. In the long process of cartographic development in China, this method played an important role in transferring and authenticating the contents of maps. Indeed, it objectively produced the effect of "square projection." The cartographic network and the half-kilometer square were used as the mathematical basis for Chinese maps for a long time during this period.

In the comparatively distant past, our country was already using conventional cartographic signs which produced notable effects for improving the interpretation of maps and, indeed, enriched their contents. It was approximately in the middle of the 19th Century when China began the extensive use of cartometry. Thus, the representation of map subjects in a horizontal projection gradually replaced landscape symbols.

STUDY ON GEODIMETRY -- Peiping, Ts's-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 1, Feb 63, pp 26-30

The following is a translation of the Russian-language abstract which appears at the end of an article, entitled "Results of the Experiment of the NASM-2a Geodimeter in the Plateau Region," by Teng Ju-kang (6772/5423/0474) and Chin Kuo-hsiung (6855/0948/7160).

With the aim of explaining the expediency of applying the NASM-2ageodimeter in the plateau region and explaining its attainable accuracy, a characteristic site was selected in 1960, a high-precision triangulation network was created, and an experiment was conducted.

The Swedish geodimeter NASM-2a No 123 was used for this purpose. The observation on all sides of the network was conducted in two evenings, using about 9-14 readings. Observation on the basis was made in three evenings, using about 24 readings.

Results of the test indicate that the geodimetric measurement maintains good accuracy along the internal convergence. The mean square error per reading was less than 14 mm. The mean square error of the final results was usually within 1-14 mm. The discrepancy in the results of the various evenings was usually less than 14 mm. Hence, it follows that the geodimeter performs evenly and with a high degree of accuracy on the plateau.

In comparing and analyzing the results of the sides measured with a geodimeter and by the triangulation method, it is evident that the accuracy of measurement during observations on the two evenings with six readings in each was usually under 1:700,000, while the maximum relative error was about 1:400,000.

The experiment also demonstrates that the effect of the external factors is often the major source of errors in the measurement. To heighten the accuracy of measuring distance with a geodimeter, attention should be given to local conditions in selecting the sides, so that the meteorological data determined on the two ends of the lines of light distribution would prove to be characteristic of all the lines. In addition, it is necessary to check the accuracy in determining centering and reduction.

STUDY ON TELLUROMETRY -- Peiping, Ts'e-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 1, Feb 63, pp 13-25

The following is a translation of the Russian-language abstract which appears at the end of an article, entitled "Results of the Investigation of a Tellurometer and Its Experimental Application," by Chang Chih-hsin (1728/1807/2450), Chin Kuc-hsiung (6855/0948/7160), Wei Keng-pin (7279/5105/6333), Hsia Chih-chung (1115/3112/0022), and Lai Hsi-an (6351/6932/1344),

This article was written as the result of numerous field experiments with a tellurometer made in the Union of South Africa and a certain experiment of its application in actual productions. These experiments were conducted in 1959-1960 by corresponding institutions in our country.

The article is divided into three parts. The first part is devoted to an account of the results of the experiments, particularly, results of experiments in the plateau region. From the results of numerous experiments, it is evident that the actual precision of the measurement of distances with a tellurometer may reach 1:200,000 under conditions of reducing the error of reverberation from the Earth's surface. However, much factual data indicate that the performance of the instrument is uneven, and, individual cases, it does not even produce results. The second part of the article considers errors of reverberation from the Earth's surface and methods for reducing such. Actual performance has already proved that these methods permit effective elimination of the reverberation error. However, they are not always effective. Consequently, the error in the reverberation from the Earth's surface when measured by a tellurometer is now also the main obstacle in improving the accuracy of measurements of distances. Thus, more extensive tests must be conducted for the final elimination of this error. The third part of the article is devoted to examining the laws of the effect of meteorological factors on tellurometric measurement of distances. Because of insufficient date, the laws cited in the article cannot be considered general. They merely represent particular cases relating to the plateau region. More experiments and necessary theoretical investigations must be conducted in the future in order to expose fully the laws of the changes caused by the effects of meteorological factors.

PROBLEMS OF SEA GRAVIMETRY--Peiping, Ts'e-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), Vol 6, No 2, May 63, pp 30-103

The following is a translation of the Eussian-language resume which appears at the end of an article, entitled "Gravimetric Measurements at Sea," by Chang Shan-yer (1728/0810/6056) and Li Hsi-ch'i (2621/6932/0366).

Principal difficulties in measuring gravity at sea lie in the fact that the gravimeters are constantly being affected by disturbances caused by rough seas and by the ship's motion. Such disturbances include the ship's slope, periodic horizontal and vertical accelerations, centrifugal velocity, etc. The use of long-and short-period gimbals involves two cases which are also considered when investigating the effects of horizontal accelerations on gravimetry readings. As a result of this, it was observed that the effect of horizontal accelerations could be eliminated if the gimbal period were sufficiently long. Use of a gimbal with a short period requires second order corrections for the horizontal accelerations. Corrections for the ship's slope caused by the final period and by damping must be considered. The effect of vertical accelerations on the gravimetry readings and the crosscoupling effect may be eliminated in the designing of the instruments and in the measuring process. This article also examines corrections for velocity during the ship's movements relative to the Earth and corrections for the submersion depth of the submarine and for the sea depth, /factors/ necessary for computing the gravity anomaly.

CHINSES RESEARCH IN PHYSICAL METEOROLOGY -- Peiping, Science Abstracts of China: Earth Sciences, No 1, 1963, p 20

The following is an English abstract of an article, entitled "Radar Equation Considering the Coherent Scattering of Radar Waves From Cloud and Raindrops," by Li Chi-chen (2621/0366/3819), which was originally published in Chi-hsiang Hsueh-pao (Acta Meterologic Sinica,) Volume 32, No 2, 1962, pages 119-128

Attention has been paid to the fact that grouping association between particles exist in clouds, as well as in rain. Coherent scattering of radar waves from cloud and raindrops dependent to each other has been evaluated and a new radar equation derived. The new equation involves the old one as its special form indicates incoherent scattering. It is found that the effect of coherent scattering in some cases is not quite small and should not be neglected.

CHINESE RESEARCH ON GLACIERS -- Peiping, Science Abstracts of China: Earth Sciences, No 1, 1963, pp 12-13

/The following is an English abstract of an article, entitled "The Great Ice Age Glaciation in China," co-authored by Sun Tienching (1327/3013/0615) and Yang Huai-jen (2799/2037/0088), which was originally published in <u>Ti-chih Hsueh-pao</u> (Acta Geologica Sinica), Volume 41, No 3-4, 1961, pages 234-244.

During the past decade, extensive geological and geographical explorations into numerous mountanious areas and in some of the subjoining piedmont plains have brought home large quantities of materials positively proving

the wide distribution of vanished glaciers of the Great Ice Age. The materials include: (1) erratic blocks, (2) moraines, (3) faceted, polished pebbles and boulders with typical glacial striae, (4) planed, polished, gouged and striated rock surface, (5) epitectonic phenomena, namely, tectonic disturbances caused by surface drag on loose and stratified deposits on the superficial layer of bed rock underneath boulder-clay, and (6) ice sculptural land forms damaged to various degrees through inter-and post-glacial erosion.

The mountanious area of northwest Hupeh, the Lushan and its surrounding plains, the scenically superb mountains of the Huangshan and parts of the Tapeishan, in central Yangtze Valley, and the mountains of the western border of the Red Basin of Szechuan yield reliable evidences for glacial action in the initial stage of our research on the subject. Subsequent investigation on a wider scope enabled us to recognize that glacial phenomena also prevails in the Great Khingan, Chilienshan (Nanshan), and Tienshan areas. Nor does the Yangtze belt mark the sudden limit of glaciation as was once supposed. Indisputable evidences for glaciation have been gathered from Kweichow, Yunnan, and even northern Kwangsi in recent years. In the region of North China now characterized by a dry climate, we have found unmistakable traces of glacierization in a number of places, notably in certain spots in the Western Hills of Peking.

The materials in hand converge to show the occurrence of poly-glaciation essentially of the corrie type in northern and southern China, seperated by interglacial periods of genial or even subtropical climate.

Many important problems, however, still remain unsolved. The more significant ones concern: (1) the origin of boulder-and-clay deposits and their associated gravels in places where they are only partly preserved on a terrace tread of leveled down to a plain in the lowland often covered by loss or other superficial deposits, (2) the clestion of demarcation between glacial and interglacial periods and of the age of these periods, (3) the question as to whether some or all such arctic faunal and floral elements as Coelodonta antiquitatis, Elephas (Mammonteus) primigenius, and Saxifraga and the warm climates ones such as Rhinoceros mercki, Bubalus, and Ulmus lived side by side or in seperate period. (4) the question as to how the proved or suspected glacial fluvio-glacial deposits are related to the different formations of Huang-t'u (loess), and (5) the division of physiographic stages from the point of alternating glacial and interglacial climates and the influences of postglacial erosion upon the superimposed erosional effects on past land surfaces throughout the glacial and interglacial periods.

CHINESE STUDY ON STRATTGRAPHY -- Peiping, Science Abstracts of China: Earth Sciences, No 1, 1963, pp 1-2

[The following is an English abstract of an article, entitled "Biostratigraphic Problems on the Triassic of Kweichow Province, China," by Yin Hung-fu (3009/7703/4395), which was originally published in <u>Ti-chin Hsueh-pao</u> (Acta Geologica Sinica), Volume 42, No 1, 1962, pages 153-184, and No 3, 1962, pages 289-306.]

The first part of thic paper deals chiefly with the Triassic stratigraphic provinces and eight subprovinces are divided on the basis of stratigraphical development and facies changes as shown on table. For each subprovince, one or two typical sections are chosen and briefly described, together with some discussion about their succession and subdivision. The upper Triassic in southwest Kweichow, the lower Triassic in the east subprovince of northwest Kweichow, and the Sanchiaotzu of the upper Triassic in the central subprovince are subdivided anew; the occurrence of post-Anisic deposit in the Ching-yen section, central Kweichow, is discussed; and a biostratigraphic study of the Triassic succession in the southeast province is made.

The author reviews the boundaries and nature of contact with Permian and Jurassic, as well as the co-relation among the different stratigraphic units within the Triassic in Kweichow and offers a list of stratigraphical terms that could be more appropriately used in this province. A special discussion on the geological range of the Leikoupotzu (Szechwan Province) and the Patuntzu (Hupen Province) has made it clear that the lower and middle part of these two formations, formerly considered to be Ladinic, are in fact equivalent to the Kuanling tzu (Kweichow Province); therefore, they should be of Anisic age.

The world-wide usage of the stages of the lower Triassic is mainly based on ammonitic faunas. Taking advantage of the coexistence of both armonites and lamellibranchiates in Ussuri Gulf, Himalaya, Transcaucasia, Alps, and Kweichow Province, this paper confirms that the Eumorphotis multiformis-Claraia aurita fauna is characteristic of the Indian stage and the Tirolites spinosus-Pteria murchisoni fauna of the Olenekian. Thus, the Feihsiangkuan-Yehlangtzu of Kweichow and Seiser and the lower Campiler of the Alps, containing the former fauna, are of Indian, Yangningchengtzu, containing the latter, and its Alpian equivalent, the middle and upper Campiler, are of Olenekian stage.

Referring to "The Draft Copy on the Griassic Faunal Zones of South China," issued by the First National Stratigraphical Congress (1959), this paper proposes to abandon the zone of Angustella Augusta, as well as that of Rhynchonella Decurtata and Maxillirchynchia Sinensis, on the ground of the very limited distribution, and also the zone of Eumorphotis

Illyrica and that of Eumorphotis inaequicostata for their erroneous geological range. The zone of Eumorphotis multiformis has been found to be extending downward, while that of Halobia superba is relimited as a local zone. A preliminary list of the Triassic fauna zones of Kweichow is proposed.

The second part of this report is a systematic analysis of the lithofacies and the faunal ecology of the Triassic of Kweichow as per stage and per subprovince. Special attention has been paid to the facies changes of the lower Triassic, as well as the over-saline-water facies of the Anisic Kuanlingtzu and the biohermal facies of middle Triassic in the Chingyen-Machangping district. The lower Triassic faunas of the epicontinental sea of southwest China are a mixture of both the Tethic and the Circum-pacific faunas, with the China Sea Serving as a sort of channel way for both faunal provinces. The upper Triassic fauna, on the other hand, becomes much more restricted in extent. The analysis leads to a general picture of the harmonious interrelations between lithofacies and ecological types and from this it is stressed that stratigraphical value of the various faunas should be appraised according to their ecological types.

INVESTIGATION IN PALAEONTOLOGY -- Peiping, Science Abstracts of China: Earth Sciences, No 1, 1963, p 2

[The following is an English abstract of an article, entitled, "New Materials of Abrograptidae," co-authored by Mu En-chih (4476/1869/0037) and Chiao Hsin-tung (0829/2450/2639), which was originally published in <u>Ku-sheng-wu Hsueh-pao</u> (Acta Palaeontologica Sinica), Volume 10, No 1, 1962, pages 1-11.]

Recently while investigating the Ordovician graptolites of Checkiang, the writers found a number of specimens of the family Abrograptidae among the collections of graptolites deposited in the Institute of Geology and Palaeontology, Academia Sinica. Four species belonging to the four genera are recognized as follows:

- 1. Dinemagraptus sinicus sp. nov.
- 2. Abrograptus formosus mu.
- 3. Parabrograptus tribraciatus gen. et op. nov.
- 4. Chiangshanites ramosus gen. et sp. nov.

These graptolite specimens were mainly collected by Prof Y. H. Lu, Miss Y. T. Hou, Mr J. T. Chang, Mr T. Y. Liu, and one of the writers (Mu) from the Middle Ardovician Hulo shale of the Chiangshan district, western Chekiang, in 1954, and partly by Mr M. T. Yeh and others from the Hulo shale of Lungyu, Chekiang, in 1958.

The family Abrograptidae was established by the senior writer in 1958. It consists of two genera known as Dinemagraptus Kozlowski and Abrograptus Mu. Both of them are monotypic. The new genus Parabrograptus resembles Abrograptus in many characters, but has a central branch and an oblique filament in addition to the three radiated filaments in the proximal portion of the first main stipe. It is most probably a derivative of Abrograptus. The new genus Chiangshanites is a multi-ramous graptolite with thecal periderm reduced. Its systematic position is still uncertain due to its fragmentary preservation. On account of the particular character of the reduced periderm, this genus is here provisionally described under the family Abrograptidae.

The occurence of these new materials of the family Abrograptidae reveals that the reduction of the periderm is almost as notable in the axonolipous graptoloids as in the axonophorous graptoloids. He further confirms the opinion that "the family Abrograptidae and the family Retiolitidae represent two different lines of the reduction of the thecal periderm in Graptoloidea."

#### MATHEMATICAL AND PHYSICAL SCIENCES

SCATTERING THEORY GENERALIZED -- Peiping, Wu-li Hsueh-pao (Acta Physica Sinica), Vol 19, No 4, Apr 63, pp 239-248

[The following is an English-language abstract of an article titled "The Time-depending Scattering Theory of Multichannel Process," by Yang Tse-sen (2799/3419/2773), Department of Physics, Peking University. References listed at the end of the article include four English-language articles, dated 1950 to 1956, and one Chinese-language article by the present author, dated 1958. This article was received for publication on 23 August 1962. The author extends thanks to his teacher, Prof Yang Li-ming (2799/4539/6900), for valuable assistance during discussions of the subject material.]

The time-depending formal theory of scattering, initiated by Lippmann and Schwinger, is generalized to the case of multichannel process.

Ekstein attempted to construct such a theory in 1956 and pointed out the orthogonality properties of the set of multichannel outgoing (incoming) scattering states, which is very important for the establishment of scattering matrix, but it seems to him that the quite general starting point of the L-S formalism is not appreciated. In his work, the simplicity of the L-S formalism is lost. He came to the conclusion that the scattering matrix cannot be regarded as the matrix of a single linear operator because he insisted on working in one single interaction representation for all the initial and final states. Thereby, the concept of scattering matrix is confused.

The present paper deals with the same generalization, but the simplicity of the L-S formalism is preserved. The explicit form of the scattering operator is given. The calculation of the various transition probability in the present case can be made in a similar way as the original L-S theory.

COSMIC RAYS STUDIED -- Peiping, Wu-li Hsueh-pao (Acta Physica Sinica), Vol 19, No 4, Apr 63, pp 205-214

[The following is an English-language abstract of an article, entitled "Nuclear Interactions of Cosmic Ray High Energy Particles With Liquid Scintillator," by Wang Shihwei (3769/0013/0251), K'uang Hao-huai (3119/3185/2037), and Yuan Yu-k'uei (5913/0151/1145) (no affiliations given). The article was submitted for publication on 22 October 1962. Of 18 references limited at the end of the article, 11 are in English, 5 in Italian, one in Japanese, and one in Chinese The most recent references are dated 1962.]

Nuclear interactions induced by cosmic ray high energy particles have been studied by means of a multiplate cloud chamber at 3,185 meters above sea level with a liquid scintillator as target material. From the analysis of 18 interactions induced by charged primaries, it is found: (1) average primary energy  $E_0 = 41 \pm 8$  Bev (by the Casthenoli formula). (2) Average multiplicity of charged secondary  $n_1 = 4.9 \pm 0.3$ . (3) With  $x = \lg \gamma$  tg 9., the differential angular distribution dN/dx indicates come possibility of the existence of double-humped shape. This angular distribution has been discussed tentatively along the lines of two-centered model.

EIECTRONIC MEASUREMENT APPLICATIONS EXAMINED -- Peiping, Wu-hsien-tien, No 5, 10 May 63, pp 1-2

[The following is a descriptive abstract of an article by An P'ei (1344/1014), entitled "The Applications of Electronics in Measurement Techniques."]

This article considers the wide application of measurement technology and the advantages offered by electronic methods. It specifically considers techniques of measuring size, time and speed, and stress. One section of the article is devoted to a consideration of the problems of radio telemetry as applied to high-speed aircraft, ballistic missiles, artificial satellites, and atomic electric power stations. The entire article is general in nature, and no reference is made to any Chinese work in the field. The article is accompanied by three block diagrams of systems for measuring stress, speed, and thickness.

ENERGY SPECTROMETER DESCRIBED --- Peiping, Wu-li Hsueh-pao (Acta Physica Sinica), Vol 19, No 4, Apr 63, pp 225-238

[The following is a translation of the Russian abstract of an article, entitled "The Cherenkov Spectrometer for Complete Absorption," by T'ang Hsiao-wei (0781/1321/1218) (no affiliation given). Of 27 references listed at the end of the articles, 17 are in English, 5 in Russian, 4 in Chinese, and one in German. The most recent references are dated 1961. The article was received for publication on 16 July 1962.]

This paper discusses the application of the Cherenkov complete absorption spectrometer to measurement of the energy spectrum of high energy electrons or photons in the field of nuclear physics. It explains the structure and principles of the Cherenkov complete absorption spectrometer and compares the characteristics of several Cherenkov complete absorption spectrometers.

NEW METHOD FOR CALCULATING PROPERTIES OF GIASS -- Peiping, Kuei-suan-yen Hsueh-pao, Vol 1, No 2, 15 May 62, pp 55-76

[The following is a translation of the Russian abstract of an article, entitled "A New System of Calculating Physical Properties of Silicate Glass," by Kan Fu-hsi (1626/4895/3588) of the Institute of Optical and Precision Instruments, Chinese Academy of Sciences. The author extends thanks to Professor Appen of the Soviet Union for his enthusiastic concern for the research involved. Of 23 references at the end of the article, 12 are in English, 6 in Russian, 3 in German, and 2 in Chinese, both of them by the present author. The most recent reference is dated 1961.]

This paper generalizes a great many of the present methods of calculating physical properties of silicate glass and compares them with the results obtained by means of four representative methods, to bring out the deficiencies of the methods of calculation. Methods of representing the composition of glass and methods of determining the calculation coefficient of each constituent are discussed. On the basis of systematic research into the chemical composition and structure of glass and its relationship with the characteristics of the glass, a new system for calculating the physical properties of silicate glass is suggested. The article provides calculation coefficients for almost 40 types of oxides, which can be used to calculate 6 kinds of physical properties, such as the index of refraction, average dispersion, density, index of thermal expansion, and indexes of torsion and elasticity. The new method of calculation is much more applicable than present methods.

There is a theoretical discussion of the rules of changes in some properties of oxides, which explains the close relationship between some characteristics of oxides in glass and its structural properties.

#### C-O-H-F-I-D-B-H-T-I-A-L

#### MISCELLANEOUS"

MANY COLLEGES ANNOUNCE VACATION MERIODS -- Peiping, Jen-min Jih-pao, 3 Jul 63

[Between 3 July and 28 July 1963, <u>Jen-min Jih-pao</u> announced the summer vacation period for many of the colleges and universities. Dates of publication are in perentheses.]

- 1. Nan-k'Ai University, from 8 July to 26 August. (3 Jul 63)
- 2. Tsinghua University, from 15 July to 1 August. (3 Jul 63)
- China University of Science and Technology, from 15 July to 2 September. (15 Jul 63)
- 4. Tientsin University, from 15 July to 7 September. (15 Jul 63)
- 5. Nanking Engineering College, from 15 July to 2 September. (19 Jul 63)
- 6. Peking University, from 20 July to 31 August. (19 Jul 63)
- 7. South Central Geological College, from 22 July to 2 September. (19 Jul 63)
- 8. Harbin Polytechnic University, from 29 July to 1 September. (19 Jul 63)
- Peking Aeronautical Engineering College, from 20 July to 1 September. (21 Jul 63)
- 10. Kirin University, from 28 July to 1 September. (25 Jul 63)
- 11. Sian Chiao-t'ung University, from 29 July to 31 August. (28 Jul 63)
- 12. Dairen Engineering College, from 5 August to 7 September. (28 Jul. 63)

#### BIOGRAPHIC INFORMATION

[The following biographic information on selected Chinese Communist scientific and technical personnel was taken from the sources cited in parentheses].

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CHANG Chieh (1728/3381)

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CHANG Chun (1728/0971), deputy secretary of the party committee, Institute of Geology, Ministry of Geology; died of an undisclosed illness on 26 Jun 1963. (Peiping, Pei-ching Jih-pao, 28 Jun 63, p 3)

CHANG Hung-yuan (1728/7703/3293), Hsiang-p'an Iron and Steel Company; author of article, "On the Properties of Crack Resistance and Technical Economy of the Ferrocement Pipes." (Peiping, Ti-mu Kung-ch'ang Hsueh-pao [Chinese Journal of Civil Engineering], Vol 8, No 3, 1962, pp 24-31)

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Vol 14, No 2, Jun 62, pp 219-225)

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All of the Institute of Zoology, Chinese Academy of Sciences; coauthors of article, "Chemical Structure and Biological Activity:
Synthesis of Substituted Phenyl N-Methyl Carbanates and Their
Biological Activities." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 49-55)

HSU Hsing-yu (1776/4281/3768)

WANG Chih-chiang (3769/0037/3068)

TUNG Yu-yuan (5516/1635/0954)

LIU Tso-lin (0491/0155/7207)

All of the East China Municipal Construction Designing. Academy; coauthors of article, "The Three-Dimensional Analysis of Pile Group With Rigid Cap." (Peiping, Tu-mu Kung-ch'eng Hsuehpao, [Chinese Journal of Civil Engineering], Vol 9, No 3, 15 May 63, pp 29-38)

HSU Lien-ts'ang (1776/5114/0221); author of article, "The Amount of Information As a Determinent of Reaction Time to Complex Stimuli." (Peiping, Hsin-li Hsueh-pao, [Acta Psychologica Sinica], No 1, 1963, pp 42-48)

- HSUEH Ta-wei (5641/1129/3634), Peking Engineering College; author of article, "Discussion on 'Thermal Stress of Spherical Shell With Rectangular Base'." (Peiping, T'u-mu Kung-ch'eng Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 1, 1962 pp 64-65)
- HSUEH Ts'eng-t'ung (5641/2582/6639), Student of Tientsin University; author of article, "Discussion on 'On Theory of Calculation for Flat Shall With Rectangular Base Without Reinforcement (III).'" (Peiping, T'u-mu Kung-ch'eng Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 2, 1962 pp 55-63)
- HU Yu-t'e (5170/2589/3676), The First Designing Academy, First Ministry of Machine Industry; author of article, "On the Crack Resistance Calculation in the Prefabricated Members of Prestressed Concrete."

  (Peiping, T'u-mu Kung-ch'eng Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 3, 1962, pp 31-36)
- HUANG Hsi-huai (7806/3556/2037), Institute of Silicate Chemistry and Engineering, Chinese Academy of Sciences (Chung-kuo K'o-Hsueh Yuan Kuei-suan-yen Hua-hsueh yu Kung-hsueh Yen-chiu-so; 0022/0948/4430/1331/7108/8944/6808/7770/0553/1331/5280/1562/1331/4282/4496/2076); author of article, "Discussion on the Mechanism of the Coloration of Copper, Celenium, and Antimony Red Glasses."

  (Peiping, Kuei-suan-yen Hsueh-pao, Vol 1, No 2, 15 May 62, pp 98-103)
- KAO Ch'un-ju (7559/5028/0320); author of article, "Simplified Calculation' for Deformation of Building Foundation." (Peiping, T'u-mu Kung-ch'-eng-Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 2, 1962 pp 44-50)

#### KAO Pao-hsin

Author of article, "Calculation of Parasitic Parameters of Crystal Diodes in Calculating a Parametric Transformer With a Differential Discharge Frequency," in Russian, (Moscow, Vestnik Moskovskogo Universiteta, Seriya Fizika 1 Astronomiya, No 3, May/Jun 62, pp 41-44)

KAO Yao-t'ing (7559/5069/0080)

LU Ch'ang-k'un (7120/7022/0981)

CHANG Chieh (1728/3381)

WANG Sung (3076/2646)

All of the Institute of Zoology, Chinese Academy of Sciences; coauthors of article "Mammals of the Hsi-Shuan-Pan-Na Area in Southern Yunnan." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 14, No 2, Jun 62, pp 180-197)

# KUAN Kuan-hsun (7070/6306/0534)

- CHENG Tso-chsin (6774/0155/2450)

  Coauthors of article, "A New Gereric Record to the Chinese Avifauna-Oxyura leucocephala (Scopoli)." (Peiping, Tung-wu Hsueh-pao, [Acta
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- KUAN Tzu-li (4619/5261/4539); author of article, "Simplified Calculation of the Quay Wall Structures Supported by Flexible Pile Group." (Peiping, T'u-mu Kung-ch'eng Hsuehpao, [Chinese Journal of Civil Engineering], Vol 8, No 3, 1962, pp 19-24)
- KUN Hsiu-fen, Department of Acoustics, Moscow State University; coauthor with L. K. Zarembo and V. A. Krasil'nikov of article, "Measurement of Acoustic Nonlinear Parameter of Liquid Nitrogen," in Russian; received for publication 5 March 1963. (Moscow, Akademiya Nauk SSSR, Akusticheskiy Zhurnal, Vol 9, No 3, 31 Jul 63, pp 382-383).

# K'UNG Fan-yao (1313/4907/3852)

- YANG Nien-ho (2799/1628/0678)

  Both of the Peking Agricultural College; coauthors of article, "Strong-ylid Parasites of Donkeys in Peking. II."(Peiping, Tung-wu Hsuehpao, [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 61-71)
- KUNG Yao-hsien (7895/5069/0341); author of article "An EEG and Clinical Study of the Cortical Function of Neurasthenics." (Peiping, Hsinli Hsueh-pao, [Acta Psychologica Sinica], No 1, 1963, pp 65-75)
- KUO Tsu-yuan (6665/4371/3293); author of article, "Productive Oxidation Pond." (Peiping, T'u-mu Kung-cheng Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 1, 1962 pp 57-62)
- LI Chih-hsun (2621/5268/0534), author of article, "A New Record of Snake to China -- Natrix himalayanus (Guenther)." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, p 432)

- LI Ch'uan-lung (2621/0278/7127), Institute of Zoology, Chinese Academy of Sciences; author of article, "Some New Species of Rhopalocera in China. III." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 101-109)
- LI Hsin-t'ien (2621/1800/1131); author of article, "The Application Of Psychotherapy in the Treatment Of Chronic Schizophrenia." (Peiping, Hsin-li Hsueh-pao, [Acta Psychologica Sinica], No 1, 1963, pp 55-56)

# LI Ming-heing

- TSAI Hai-ying
  Coauthors of untitled report on the complex interaction of internal and external factors in the development of cancer of the uterus, given at the Eighth International Anticancer Congress in Moscow.

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- LI Ping-wei (2621/3521/1218), Inner Mongolia University; author of article, "Improved Convergence in the Substitution Method for Calculating Multistoried Rigid Frames." (Peiping, T'u-mu Kung-ch'eng Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 2, 1962, pp 26-31)
- LIN Chen-t'ao (2651/2182/3447), Institute of Zoology, Chinese Academy of Sciences; author of article "Unionidae (Mollusca) of Poyang Lake, Kiangsi Province, China." (Peiping, Tung-Wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 2, Jun 62, pp 249-261)
- LIN Hsuan-chung (2651/1357/0022), Designing Academy, Department of Construction, Fukien Province; author of article, "A Direct Method for Calculation of Reinforced Concrete Members Subject to Oblique Eccentric Loading." (Peiping, T'u-mu Kung-ch'eng Hsueh-pao, [Chinese Journal of Civil Engineering], Vol 8, No 2, 1962, pp 39-44)

LIU Ch'eng-chao (0491/2110/6856)

HU Shu-ch'in (5170/3219/3830)

YANG Fu-hua (2799/2329/5478)
All of the Szechwan Medical College and Szechwan Branch, Chinese Academy of Sciences; coauthors of an article, "Preliminary Report of Amphibia From Western Kweichow." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, pp 381-393).

LIU Shin-I (0491/0013/3584)

WU Ch'in-0 (6762/0530/1230)
Coauthors of article, "Electroencephelographic and Electrodermatographic Studies of the Orienting Reflex in Man." (Peiping, Hsin-li Hsueh-pao, [Acta Psychologica Sinica], No 1, 1963, pp 1-11)

LIU Shih-I (0491/0013/3584)

WU Ch'in-0 (6762/0530/1230)

Coauthors of article, "Electroencephelographic Study of the Formation of Temporary Connections in Man." (Peiping, Hsin-li Hsueh-pao, [Acta Psychologica Sinica], No 1, 1963, pp 11-20)

LIU Tsu-tung (0491/4371/3159)

LTANG Chih-ch'eng (2733/1807/2052)

Both of the Institute of Genetics, Fu-tan University; coauthors of article, "The Complementary Effect of Stilbestrol and Methylthioura cil on the Fattening of Cockerels." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol. 14, No. 2, Jun 62, pp 155-165)

LTU Yueh-ying (0491/2588/5391), Institute of Zoology, Chinese Academy of Sciences; author of article, "On the Fresh Water Pulmonata From Shigatze and Gyangtse Regions in Tibet, China." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 71-79)

LO Chia-hsiang (2867/0857/4382)

WANG Te-ch'un (3769/1795/2504)
Both of the Institute of Hydrography, Research Academy of Water Conservation; coauthors of article, "Special Characteristics of the Chemistry of Chinese River Currents." (Peiping, Ti-li Hsueh-pao, [Acta Geographica Sinica], Vol 29, No.1, Mar 63, pp 1-14)

LO Tse-hsun (5012/3419/3800)

HSIEH Tsung-yao (0673/1350/5069)

Coauthors of article, "A Method of Estimating the Number of the Musk Deer." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, p 430)

- LO Tse-hsun (5012/3419/3800); author of article, "The Lethal Effect of Zinc Phospide on the Yellow Rice Rat (Rattus Rattoides Exigus A. B. Howell)." (Peiping, Tung-wu Hsueh-pao, [Acta Zoologica Sinica], Vol 14, No 2, Jun 62, p 266)
- MA Chia-chi, Department of Foundry Production, Krasnovarskiy Institute of Nonferrous Metals; coauthor with A. G. Spasskiy of article, "Investigation of the Effects of Composition and Temperature Regime on Heat Cracking of Aluminum Magnesium Alloys in Chill-Mold Casting," in Russian; received for publication 10 May 1961. (Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 3, 21 Jun 63, pp 125-127)
- MA Fu-wu, Moscow Institute of Petrochemical and Gas Industry imeni I. M. Gubkin; author of dissertation for the scientific degree of Candidate of Technical Sciences, "Certain Questions on Automatic Regulation of Petroleum Mains With Heating and Synthesis of Optimum Regulators in Polyviscous Line Systems," in Russian. (Moscow, Vechernyaya Moskva, 7 Jun 63, p 4)
- MA Shih-chun (7456/0013/7486); author of article "Scope of Two Branches of Animal Ecology: Macroecology and Microecology." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, p 429)

- P'ANG So-fu (3282/6956/4395); author of article, "A Discussion on the Causes of Falling Temperatures During the Winter Half of the Year in South China." (Peiping, Ti-li Hsueh-pao [Acta Geographica Sinica], Vol 29, No 1, Mar 63, pp 84-87)
- PAO Shih-sun (7637/6347/1327); author of artitle, "Analysis of Hinged Bents With Irregular Column Arrangement." (Peiping, T'u-mu Kung-ch'eng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 9, No 3, 15 May 63, pp 16-22)

P'ENG Jui-hsiang (1756/3843/4382) FANG Yun-ch'iu (2455/5366/4428) CHING Ch'i-ch'eng (5427/0366/6134)

Coauthors of article, "Target Size as a Cue to Distance Judgment - Along a Ground Strip." (Peiping, Hsin-li Hsueh-pao [Acta Psychologica Sinica], No 1, 1963, pp 31-42)

- FENG Kuo-fan (6772/0948/5672), Institute of Zoology, Chinese Academy of Sciences; author of article "A New Species of Trompiculid Mite From Szechwuan, China." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, pp 417-421)
- P'ENG Tsai-ch'eng, coauthor with Pindrokh of article, "Precise Calculation of the Properties of Air at High Temperatures," in Russian; first published in Voprosy Raketnoy Tekhniki, No 12, December 1962, pp 307-310. (Moscow, Inzhenerno-Fizicheskiy Zhurnal, No 7, Jul 63, p 134)

PING Chih (4426/1807), Institute of Zoology, Chinese Academy of Sciences; author of article "On the Myoseptal Spines of the Carp (Cyprinus Carpio L.)." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 2, Jun 62, pp 175-180)

SEN Shih-i (3088/0013/6965), Nankai University; author of article,
"The Necessary and Sufficient Condition for the Validity of
Information Fidelity Criterion in the Shannon Theorem." (Peiping, Shu-hsueh Hsueh-pao [Acta Mathematica Sinica], Vol 12, No 4,
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- SHU Wen-lung (5289/2429/7893), Academy of Construction, Ministry of Metallurgical Industry; author of article, "Economic Design of Rectangular Sedimentation Tanks." (Peiping, Tu-mu Kung-ch'eng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 9, No 3, 15 May 63, pp 38-43)
- SUN Ju-yung (1327/0320/3144), Biology Department, Peking Normal University; author of article, "On the Application of Various Methods Expressing the Intensity of Chemical Thermoregulation." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 44-49)
- T'AO I-chung (7118/6654/6945); author of article, "On the Cracks and Strengthening of Tee Beans of the Typical Design, Ser. No: G-109." (Peiping, T'u-mu Kung-cheng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 8, No 1, 1962, pp. 26-33)
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- T'SAI Shao-huai (5591/4801/2037); author of article, "On the Problem of Safety Criterion for Reinforced Concrete Structures." (Peiping, Tu-mu Kung-ch'eng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 8, No 2, 1962, pp 31-39)
- TS'AI Tao-chang, Moscow Institute of Railroad Engineers; author of dissertation forscientific degree of Candidate of Technical Sciences, "Investigation of Problems in Designing Plant Sorting Stations Generally Connected With Application of Various Types of Transport on Sites of Metallurgical Enterprises," in Russian. (Moscow, Vestnik Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta Zhelezno-dorozhnogo Transporta, Vol 3, 10 May 63, p 65)
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- TS'UI Meng-yuan, Institute of Chemical Physics, Academy of Sciences USSR; author of dissertation for scientific degree of Candidate of Chemical Sciences, "Determination of the Rate Constant of Elementary Reactions of Nascent Oxygen and Hydrogen With Certain Hydrocarbons," in Russian. (Moscow, Vechernyaya Moskva, 8 May 63, p 4)
- TS'UI Meng-yuan, Institute of Chemical Physics, Academy of Sciences USSR; coauthor with V. V. Azatyan and A. B. Nalbandyan of article, "Determination of the Velocity Constant in the Reaction of Nascent Oxygen With Propane and N-Butane," in Russian. (Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol 36, No 1, 1 Feb 63, pp 23-29)
- TUNG Chieh-p'ing (5516/0094/5493); author of article, "A Study of the Susceptibility of Common Mosquitoes of Shanghai to the Bird Malaria Parasite, Plasmodium Gallinacum." (Peiping, Tung-wu Hsueh-pao "Acta Zoologica Sinical, Vol 14 N, No 3, Sep 62, pp 314-321)

T'UNG Ti'chou (4547/4574/0719) HSIEH Yu-fen (0673/3022/5358)

Both of the Institute of Zoology, Chinese Academy of Sciences; coauthors of article, "Nuclear Transfer in Vertebrates." (Beiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 151-165).

- WANG Chang-pao, Moscow Institute of Steel and Alloys; author of dissertation for the scientific degree of Candidate of Technical Sciences, "Investigation of Various Methods of Automatic Regulation of Reverberatory Flames and Their Effect on the Process of Heat Exchange in Open Hearth Furnaces," in Russian. (Moscow, Vechernyaya Moskva, 15 Feb 63, p 4)
- WANG Chien-pai (3769/1017/4101); author of article, "Analysis of Statistically Indeterminate Trusses by Slope-Deflection Method."
  (Peiping, T'u-mu Kung-ch'eng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 8, No 1, 1962, pp 14-21).
- WANG Chih-chling (3769/1807/3237); author of article, "The Role of Eye Movement in the Development of Perception and Recognition in Preschool Children." (Peiping, Hsin-li Hsueh-pao [Acta Psychologica: Sinica], No 1, 1963, pp 48-55)

- WANG Ching-ch'i (3076/2529/3823), Research Academy of Hydraulic Engineering and Hydroelectric Power, Chinese Academy of Sciences and the Ministry of Water Conservancy and Electric Power; author of article, "Discussion on "On Theory of Calculation for Flat Shell With Reatangular Base Without Reinforcement (II).'" (Peiping, T'u-mu Kung-ch'eng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 8, No 2, 1962, pp 55-63)
- WANG Keng-nan (3769/5087/0589), Department of Biology, Nanking University; author of article, "Studies on a New Genus and Two New Species of Allocreadildae (Trematoda) From China." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 55-61)
- WANG Nai-liang (3769/0035/2856), Department of Geology and Geography, Peking University; author of article, "The Present Status of Geomorphology in France." (Peiping, Ti-li Hsueh-pao [Acta Geographica Sinica], Vol 29, No 1, Mar 63, pp 52-63)
- WANG Tun-ch'ing (3769/2415/3237), Fukien Institute of Epidemic Diseases; author of article "Two New Mites of the Genus Hirstionyssus Fonseca, 1948 (Acarina, Libonyssidae)." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, pp 411-417)
- WANG Tun-ch'ing (3769/2415/3237), Fukien Institute of Epidemic Diseases; author of article, "A New Mite of the Genus Echinolaelaps Ewing, 1929 (Acarina: Laelaptidae)." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 15, No 1, Mar 63, pp 98-101)
- WANG Yen (3769/1750), Department of Histology and Embryology, Sheng-yang Medical College; author of article, "The Study of the Intrinsic Innervation of the Human Liver." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 3, Sep 62, pp 289-297)

WU Chao-cheng (0702/0340/2973) MOU Chi-sheng (4924/4764/3932)

Both of the Academy of Construction Materials, Ministry of Construction Engineering; coauthors of article, "Research on the Structure of the Granulated Blast-Furnace Slag." (Peiping, Kuei-suan-yen Hsueh-pao, Vol.1, No 2, 15 May 62, pp 103-114)

- WU Ta-shen, Acoustics Institute, Academy of Sciences USSR; author of dissertation for the scientific degree of Physicomathematical Sciences, "Experimental Investigation of Vibration Damping of Plates During Introduction of Vibration-Absorbing Coatings," in Russian. (Moscow, Vechernyaya Moskva, 21 Jun 63, p 4)
- YANG Kuo-hsien (2799/0948/0341), Ch'eng-tu Railroad School; author of carticle, c'Discussion on 'The Space Calculation of the Reinforced Concrete Beam Bridge With the Ratio Between the Width and Span Less than 0.5 (II).'" (Peiping, T'u-mu Kung-ch'eng Hsueh-pao [Chinese Journal on Civil Engineering], Vol 9, No 3, 15 May 63, pp 61-65)
- YANG Wu-yang (2799/0710/2254), Department of Geology and Geography, Peking University; author of article, "An Introduction and Comprehension of Several Principles and Procedures Relating to the Regional Division of Production and Distribution." (Peiping, Ti-li Hsuehpao [Acta Geographica Sinica], Vol. 29, No 1, Mar 63, pp 63-78).
- YEH Yu-p'u, coauthor with A. T. Grigor'yev, Ye. M. Sokolovskaya, N. A. Nedumov, M. V. Maksimova, and I. G. Sokolova of article, No 151 in "List of Works for 1961 which contain new data on crystalline structures" as selected by the International Union for Crystallogography and the Commission on Crystallostructural Data, and titled, "Polymorphous Conversions of Cr and Composition Diagram of the System Cr-Ni in a Field Rich in Cr," in Russian; first published in Zhurnal Neorganicheskoy Khimii, No 6, 1961, page 1248. (Moscow, Akademiya Nauk SSSR, Zhurnal Strukturnoy Khimii, Vol 4, No 4, Jul-Aug 63, p 650)
- YU Fu-keng (0205/1381/5087); author of article, "The Effects of Prestressed Steel in the Compressive Zone on the Ultimate Strength of a Reinforced Concrete Member." (Peiping, T'u-mu Kung-cheng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 8, No 1, 1062, pp 62-64)

YU I-hsin (5713/0110/2450) CHENG Tso-hsin (6774/0155/2450)

Coauthors of article, "Two New Records of Chinese Birds From Southern Yunnan-Garrulax Ruficollif and Ptyonoprogne Concolor." (Peiping, Tung-wu Hsueh-pao [Acta Zoologica Sinica], Vol 14, No 2, Jun 62, p 287)

- YU Pang-jui (0205/6721/3843); author of article, "Discussion on 'On the Determination of the Calculated Strength of Clay Foundation.'" (Peiping, T'u-mu Kung-ch'eng Hsueh-pao Ethinese Journal of Civil Engineering), Vol 8, No 3, 1962, pp 41-44)
- YU Tsung-ming (7411/1350/2494); author of article, "A Rational Method for Analyzing Reinforced Commente Trusses." (Peiping, T'u-mu Kung-ch!eng Hsueh-pao [Chinese Journal of Civil Engineering], Vol 9, No 3, 15 May 63, pp 43-47)
- YUAN Jung-fang, Joint Institute of Nuclear Research, Dibna; coauthor with T. D. Blokhintseva, A. T. Vasilenko, V. G. Grebinnik, V. A. Zhukev, G. Libman, L. L. Nemenov, and G. E. Selivanov of article, "Eight-Liter Hydrogen-Deuterium Bubble Ghamber in a Magnetic Field," in Russian. (Moscow, Pribori i Tekhnika Eksperimenta, No 5, Sep-Oct 62, pp 51-59)
- YUEH Ching-chung (1471/2529/0022), Institute of Optics and Precision Instruments, Chinese Academy of Sciences; author of article, "Imbedding Theory and Cohomology of Permutation Troups (II)." (Peiping, Shuhsueh Hsueh-pao, [Acta Mathematica Simical, Vol 12, No 4, Dec 62, pp 341-351)

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UNCLASSIFIED
Central Intelligence Agency



7 September 2004

Ms. Roberta Schoen
Deputy Director for Operations
Defense Technical Information Center
7725 John J. Kingman Road
Suite 0944
Ft. Belvoir, VA 22060

Dear Ms. Schoen:

In February of this year, DTIC provided the CIA Declassification Center with a referral list of CIA documents held in the DTIC library. This referral was a follow on to the list of National Intelligence Surveys provided earlier in the year.

We have completed a declassification review of the "Non-NIS" referral list and include the results of that review as Enclosure 1. Of the 220 documents identified in our declassification database, only three are classified. These three are in the Release in Part category and may be released to the public once specified portions of the documents are removed. Sanitization instructions for these documents are included with Enclosure 1.

In addition to the documents addressed in Enclosure 1, 14 other documents were unable to be identified. DTIC then provided the CDC with hard copies of these documents in April 2004 for declassification review. The results of this review are provided as Enclosure 2.

We at CIA greatly appreciate your cooperation in this matter. Should you have any questions concerning this letter and for coordination of any further developments, please contact Donald Black of this office at (703) 613-1415.

Sincerely,

Mancy Latas Scafer Sergio N. Alcivar

Chief, CIA Declassification Center, Declassification Review and Referral

Branch

# Enclosures:

- 1. Declassification Review of CIA Documents at DTIC (with sanitization instructions for 3 documents)
- 2. Declassification Status of CIA Documents (hard copy) Referred by DTIC (with review processing sheets for each document)

# **Processing of OGA-Held CIA Documents**



The following CIA documents located at DTIC were reviewed by CIA and declassification guidance has been provided.

OGA Doc ID   Job Num   Box   Fidr   Doc	Job Num	Box	Fig		Doc ID	Document Title	Pub Date Pages	ages	Decision	Proc Date
AD0335308	78-03117A	194	-	23	4363	Scientific Information Report Chemistry And Metallurgy (26)	3/7/1963	71	Approved For Release	3/25/2004
AD0335625	78-03117A	197	-	ဗ	4460	Scientific Information Report Chemistry And Metallurgy (27)	4/4/1963	51	Approved For Release	3/25/2004
AD0336825	78-03117A	199	-	56	4562	Scientific Information Report Chemistry And Metallurgy (28)	5/9/1963	20	Approved For Release	3/25/2004
AD0332150	78-03117A	183	-	5	3916	Scientific Information Report Chinese Science (11)	10/4/1962	52	Approved For Release	3/29/2004
AD0332434	78-03117A	183	-	40	3951	Scientific Information Report Chinese Science (12)	10/19/1962	29	Approved For Release	3/29/2004
AD0332795	78-03117A	184	-	37	3988	Scientific Information Report Chinese Science (13)	11/5/1962	48	Approved For Release	3/29/2004
AD0333069	78-03117A	186	-	_	4028	Scientific Information Report Chinese Science (14)	11/16/1962	30	Approved For Release	3/29/2004
AD0333148	78-03117A	187	-	19	4078	Scientific Information Report Chinese Science (15)	11/29/1962	44	Approved For Release	3/29/2004
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AD0334433	78-03117A	193	<b>-</b>	22	4322	Scientific Information Report Chinese Science (20)	2/15/1963	28	Approved For Release	3/29/2004
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AD0335847	78-03117A	198	-	33	4526	Scientific Information Report Chinese Science (22)	4/18/1963	19	Approved For Release	3/29/2004
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AD0337777	78-03117A	202	<b>-</b>	27	4687	Scientific Information Report Chinese Science (25)	6/6/1963	52	Approved For Release	3/29/2004
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